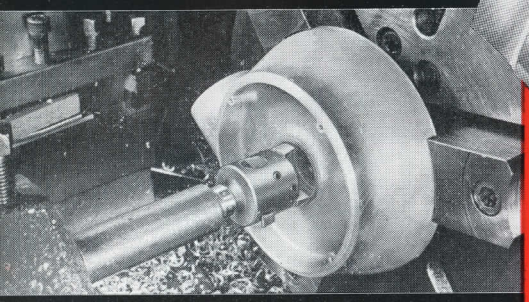
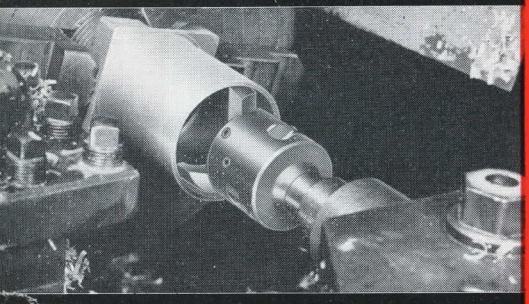
A REAL PRODUCTION TOOL!

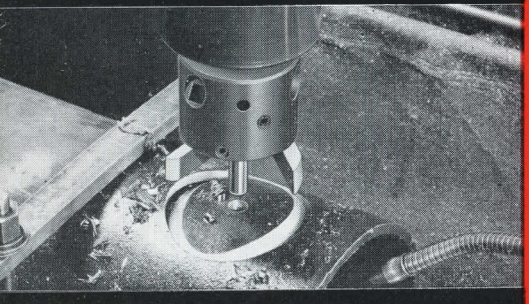
The NEW Clark "HOLE-MAKER"



BORING—An excellent production tool for boring holes in forgings, castings, etc. Clark "HOLE-MAKER" insures correct size in one pass—feeds 3 times faster with good finish.



SIZING—I.D.'s are easily held on tolerance with "HOLE-MAKER." Cutters can be expanded to compensate for wear, are easily reground and reset when required.



HOLE-MAKING—Producing large, true holes in pipe, tanks, cylinders, etc. is easy with a Clark "HOLE-MAKER." Note the pilot which prevents "walking" of the tool, insures easy starts on uneven surfaces.

DRILLING—Contrast this job with ordinary drilling—No tapered point to clear, no three-cornered holes produced! Pilot maintains true circle. When bit tips cut through, hole is finished!

Available with straight or tapered shanks. Special shanks, pilots and pilot drills to order.

5 "HOLE-MAKER" sizes produce all holes from 1" to 6" I.D.

Chatter-free ... double socket-head set-screws positively lock each cutter.

Heavy, heat-treated alloy steel body.

Fully enclosed tool slots for greater strength and rigidity.

High speed steel cutters.

Three adjustable cutters easily compensated for wear.

Full 1" I.D. expansion range.

Removable pilot, can be replaced with pilot drill.

Does jobs no drill can do!

This new Clark "HOLE-MAKER" pays its way in every shop ... in TURRET LATHES, CHUCKING MACHINES, in RADIAL DRILLS, DRILL PRESSES ... even in portable electric and pneumatic drills —*wherever holes must be produced!* No other hole-cutter like it ... a completely new design!

USE THIS "HOLE-MAKER" to produce round, true, smooth-walled holes in *forgings, castings, boiler plate, skin-thin sheets; in cylinders, tanks, crowned surfaces, pipe, tubing, etc.* ... For enlarging holes in *tubing*, cleaning up *cored holes in castings*, for boring through *irregular, webbed surfaces* and for *trepanning* jobs. Clark "HOLE-MAKER" does the job in *any* material ... ferrous and non-ferrous metals, plastics, Transite, etc., with no fuss, no trouble!

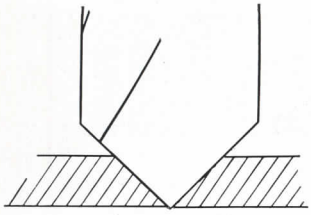
ELIMINATES BIG DRILL INVENTORY— One "HOLE-MAKER" replaces many drill sizes, overcomes wear and replacement problems! Replaceable cutters are easily reground. Bores three times faster than single pointing. Overcomes drift; can't "walk" on starts or drill out-of-round holes.

Put Clark "HOLE-MAKER" to work on your hole production jobs. Watch the "HOLE-MAKER" CUT COSTS ... Does work *NO DRILL CAN DO!*

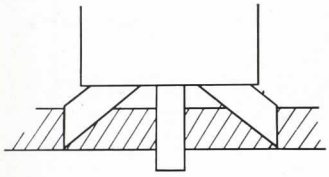
SOLD BY:

Robert H. Clark Company, 9330 Santa Monica Blvd., Beverly Hills, California

Why *Clark* "HOLE-MAKER" does jobs no drill can do...

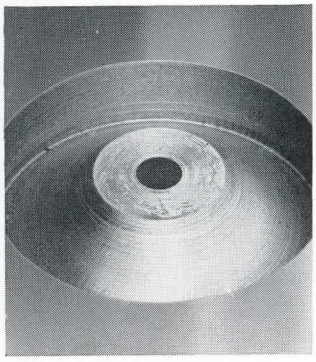


Note drill point has broken through. Hole is not yet expanded to size. Lands are unsupported—Drill will walk, producing odd shaped hole, usually hangs up as break-through occurs.



The "HOLE-MAKER" reverses conventional drilling procedure. Note that the hole does not start from center, is never expanded. *Full gauge is established the moment the cutter touches the work!* When the "HOLE-MAKER" clears the work the hole is finished. Piloting is maintained until the job is done—no chance for out-of-round holes, no difficult starting problems on odd shapes or curved surfaces!

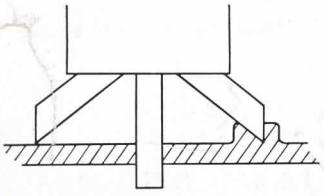
CLARK "HOLE-MAKERS" ARE PILOTED TWO WAYS!



Each "HOLE-MAKER" pilot is removable. This can be replaced with a pilot drill, if advantageous. When either pilot or pilot drill enters the pilot hole it provides an outboard support ahead of the cutters.

Spindles can't deflect, holes can't wander, the tool can't walk. Note also, "HOLE-MAKER" shears only with the *inner* tool bit edges, developing a cone in the work which *centralizes* the cutters and *further stabilizes* the action!

FAST HOLES IN WEBBED SECTIONS



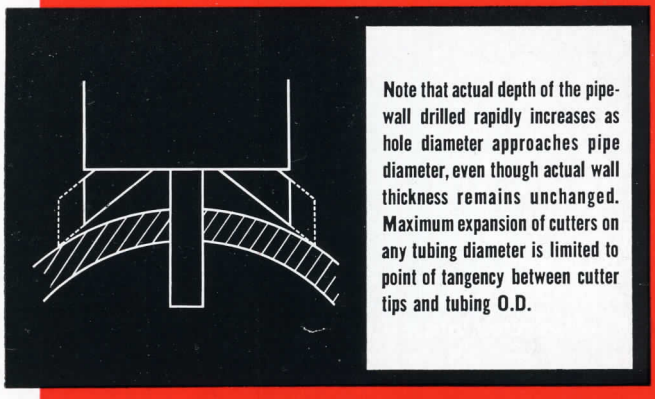
Pilot directs the "HOLE-MAKER" in a straight line even though only one side is cutting through web or other irregularity. Three-bladed construction insures one blade in cut at all times, making a smooth feed, free from grabbing even on intermittent cuts.

CUTTING HOLES IN PIPE AND TUBING

Clark "HOLE-MAKER" gives you the simplest, fastest way yet developed to produce holes in pipe, tubing, cylinders and similar curved surfaces. To aid you in determining the *MAXIMUM* HOLE DIAMETER which can be successfully produced in the *MINIMUM* PIPE OR TUBE DIAMETER, the following chart is furnished.

HOLE CUTTING CAPACITIES IN PIPE, TUBING AND CURVED SURFACES

TOOL	HOLE DIAMETER (in inches)	MINIMUM TUBE O.D. (in inches)	MAXIMUM WALL THICKNESS (in inches)
102	1.000	1.628	.071
102	1.250	2.035	.106
102	1.500	2.442	.151
102	1.750	2.849	.191
102	2.000	3.256	.228
203	2.000	3.256	.118
203	2.250	3.663	.173
203	2.500	4.070	.216
203	2.750	4.477	.254
203	3.000	4.884	.295
304	3.000	4.884	.197
304	3.250	5.291	.239
304	3.500	5.698	.280
304	3.750	6.105	.321
304	4.000	6.512	.362
405	4.000	6.512	.285
405	4.250	6.919	.326
405	4.500	7.326	.362
405	4.750	7.733	.407
405	5.000	8.140	.448
506	5.000	8.140	.330
506	5.250	8.547	.371
506	5.500	8.954	.412
506	5.750	9.361	.452
506	6.000	9.768	.494



Note that actual depth of the pipe-wall drilled rapidly increases as hole diameter approaches pipe diameter, even though actual wall thickness remains unchanged. Maximum expansion of cutters on any tubing diameter is limited to point of tangency between cutter tips and tubing O.D.

RECOMMENDED "HOLE-MAKER" SPEEDS AND FEEDS are comparable to those of conventional twist drills of the same diameter.

EASY SIZE SPECIFICATION

"HOLE-MAKER" model numbers automatically designate the hole range each tool covers. First and last digits represent minimum and maximum hole sizes produced; Thus: Model 102 = 1" to 2".

TOOL	RANGE	SHANK	FLAT PLATE THICKNESS DRILLED AT MIN. DIA.	FLAT PLATE THICKNESS DRILLED AT MAX. DIA.	BLADE SIZE	PILOT SIZE	PRICE	EX. BLADES (Set of 3) HSS
102	1"-2"	½" SS	.312	.750	5/16"	¼"	$ 54.25	$ 6.20
102	1"-2"	2 MT	.312	.750	5/16"	¼"	56.50	6.20
203	2"-3"	½" SS	.625	1.000	⅜"	⅜"	62.00	9.30
203	2"-3"	2 MT	.625	1.000	⅜"	⅜"	63.25	9.30
304	3"-4"	3 MT	.812	1.187	½"	½"	78.50	13.90
304	3"-4"	4 MT	.812	1.187	½"	½"	78.50	13.90
405	4"-5"	4 MT	1.062	1.500	⅝"	½"	94.75	23.80
506	5"-6"	4 MT	1.250	1.750	⅝"	½"	112.50	23.80

When ordering Clark "HOLE-MAKERS" or re-ordering blades, specify material to be cut. Special shanks, pilots and pilot drills furnished on order.

Robert H. Clark Company 9330 SANTA MONICA BLVD. BEVERLY HILLS, CALIFORNIA

Write to factory for recommendations on special hole making problems!

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